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Sticking to its Knitting:

Why the Bank of Canada Should Focus on Inflation Control, not Financial Stability

David Laidler

In this issue...

Canadians are beginning to take the Bank of Canada's success in controlling inflation for granted. Now, some commentators suggest giving the bank the extra responsibility of maintaining financial-market stability. Author David Laidler argues that the authorities already have adequate tools to deal with such problems and that to extend monetary policy's mandate to this field would be a small but dangerous step toward the kind of monetary fine-tuning that caused big trouble in earlier years.

The Study in Brief

It has become painfully evident that low inflation is not, in and of itself, sufficient to guarantee overall stability to the financial system. The bursting of the high-tech stock market bubble of the late 1990s in North America is sufficient evidence of this, but there were echoes here of the collapse of Japan's bubble economy at the beginning of the decade, and even of the stock market crash of 1929 that marked the onset of the Great Depression of the 1930s. All of these episodes occurred at time when inflation was low and stable. At the same time, the Bank of Canada's success in controlling inflation has been matched in many countries, to the point that monetary policy appears almost routine.

This combination of circumstances has led to a new interest in financial stability among central bankers, and a debate is beginning about what they might do to enhance it. No serious commentator is suggesting that inflation targeting should be abandoned for more ambitious goals, but there are those who suggest that existing regimes ought to be modified at least to the point of taking more notice of asset price behaviour, and others who argue that, sometimes it might be appropriate to trade off a little short term inflation stability in order to pre-empt financial market problems before they become acute.

This *Commentary* argues that monetary policy makers should think several times before becoming more ambitious in their goals. It notes that central banks already have all the powers they need to prevent financial market collapses getting out of hand in the wake of asset-price bubbles. In their role as lenders of last resort, they can and should be ready to provide ample liquidity to markets in such circumstances, measures which the Bank of Japan failed to take in the early 1990s. The Bank of Canada should stick to the single basic task of targeting inflation, while always holding lender-of-last-resort powers in reserve.

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More and more commentators are calling for central banks, including the Bank of Canada, to make the prevention of financial instability one of their policy goals, in addition to the maintenance of low and stable inflation. That is a siren song to which central banks should not succumb, as this *Commentary* will demonstrate.

Current arguments for giving the prevention of financial instability a more prominent place than it now occupies in monetary policy stop short of explicitly advocating an outright return to 1960s style fine-tuning. The very fact, however, that financial instability often has roots in more fundamental economic processes means that those who advance such arguments are moving in just that direction. Unfortunately, when central banks pursue over-ambitious goals they can sometimes make matters worse rather than better.

High and variable inflation is itself an important type of financial instability. However, the phenomenon can also involve such events as stock market and housing market bubbles, failures of banks and other financial institutions, and foreign exchange crises. There is no doubt that such events can do serious economic damage in their own right, over and above any problems caused by rapidly rising and fluctuating prices. That is perhaps why, with relatively low and stable inflation becoming entrenched in Canada and elsewhere, and with its maintenance now a matter of routine, commentators are beginning to ask central banks to pay explicit attention to these other aspects of financial instability.

Instability in the financial system is bound to be of concern to any central bank, but there are a variety of ways in which such concern can be expressed. A central bank may exercise regulatory and supervisory powers over financial institutions with a view to ensuring their continuing viability or, as in Canada, it can work closely with other agencies to which this task has been assigned. In its capacity as the ultimate provider of liquidity to the system, it can stand ready to stabilize it in times of crisis, by acting as a lender of last resort. Or a central bank, even one committed to low inflation, might take a more interventionist role, trying to predict and then forestall problems before they arise, even if this means taking actions that temporarily cause the inflation rate to deviate from its assigned time path.

The first two of these options are benign, but I will show in this *Commentary* that the third is dangerous. I argue that for the Bank of Canada to commit itself to using the conventional tools of monetary policy to forestall financial instability would complicate its agenda to the point of asking for more than it can reasonably deliver. I conclude that the bank should give its undivided attention to controlling inflation and rely on the regulatory and supervisory framework to maintain stability, while always standing ready to play a lender-of-last resort role if things nevertheless go wrong. It should, in other words, stick to its knitting.

Financial Instability Grabs Attention

Some central banks give signs of being sympathetic to the calls for broadening their mandate. The Bank of Canada's recent launch of a semi-annual *Financial*

*The author is grateful to Robert Amano, Lloyd Atkinson, Claudio Borio, John Chant, Charles Freedman, and Robert Tetlow for helpful comments on earlier drafts of this *Commentary*. Should there be errors, they are his responsibility.

System Report provides the most visible manifestation of a growing interest in financial stability in Canada. This publication complements the bank's *Monetary Policy Report* and discusses on a regular basis a range of issues concerning the financial system that were not usually dealt with in the older publication.[1] The bank's growing concern with these matters is part of a broader-based trend in central banking circles. On the international level, the Bank for International Settlements (BIS), in particular, has extended its longstanding concern with devising international standards for the regulation and supervision of banks to encompass more general analysis of the roots of financial instability and what policymakers, including central banks, might do about it.[2]

Monetary policy debates are subject to intellectual fashions. And it is a reasonable bet that we have not heard the last of this issue. On one level, we should not be concerned that central banks are taking a leading part in these new discussions. Financial instability poses real problems and central banks have a special role in the monetary system as the ultimate source of liquidity and the most important single contributor to its smooth performance. Furthermore, their officials and research staff have a comparative advantage in dealing with these questions as a result of the detailed knowledge of financial markets that they already bring to the routine conduct of monetary policy.

On another level, however, there is cause for serious concern. If central banks, the Bank of Canada included, begin to deliberately aim monetary policy at the maintenance of financial stability in general, in addition to inflation-rate stability in particular, they will move back towards the kind of ambitious fine tuning which they attempted in the 1970s and 1980s. The failure of this approach to policy had a great deal to do with persuading them to settle for a simpler set of goals in the 1990s. As the collective memory of earlier errors fades, however, the risk of repeating them increases.

Commentary *Structure*

The *Commentary* begins with a brief reprise of the principal episodes of financial instability that marked the 1990s and makes the argument that, as in earlier times, many of these were associated with faulty fiscal and exchange-rate policies, and would probably not have happened under a well-configured monetary order focussed on the maintenance of low inflation. It also notes, however, that some serious bouts of financial upheaval — the collapse of the Japanese bubble economy in the early 1990s, for example, or the recent problems that originated in the high-tech sector in North America and Europe — do not seem to have originated in any gross policy errors. It argues that these are symptomatic of

1 A further example of the Bank's continuing interest in these issues is a recent speech given by Deputy Governor David Longworth on January 9, 2004, after this *Commentary* had been written.

2 Sir Andrew Crockett, the then about-to-retire General Manager of the BIS, gave a forceful exposition of the case for putting financial stability on the monetary policy agenda in his opening remarks to a BIS conference on "Monetary stability, financial stability and the business cycle", held on March 28/29, 2003 (Crockett, 2003). For evidence that the BIS is attracting an attentive international audience for its concerns, see the recent account in *The Economist* (2003) of the proceedings of the Federal Reserve Bank of Kansas City's 2003 Jackson Hole conference.

deeper sources of instability in the workings of the market economy and are legitimate matters of concern for policymakers.

Then, the paper considers two types of monetary policy response to the challenges posed by such episodes for economies where the regulatory and supervisory framework is sound. It argues that the first of these — the deployment by central banks of their power to create liquidity in lender-of-last-resort operations — is intellectually untidy, though compatible with inflation targeting as it is currently practised. The *Commentary* contends that the second kind of response — the use of monetary measures to pre-empt financial crises before they occur — involves the adoption of a more complicated policy agenda which, though rather attractive in the abstract, carries with it the practical danger of monetary policy becoming committed to over-ambitious goals.

Financial Instability and Low Inflation

Inflation targeting came into vogue in the early 1990s, a decade that began with the collapse of Japan's bubble economy and the onset in that country of real stagnation and price-deflation that haunts it still. This event was shortly followed by an exchange-rate crisis in the European monetary system, and another that also involved banking systems — what became known as the Tequila crisis — in Latin America. Later in the decade came currency and banking-system collapses in Asia, Russia's debt default, the near–demise of Long-term Capital Management in the U.S., Brazil's forced abandonment of its crawling–peg exchange rate, and the implosion of Argentina's banking system in the wake of its rigidly fixed exchange rate's demise. And for good measure, the decade ended with the bursting of yet another asset-market bubble, this time in North American and European high-tech sectors.

There have been other nasty surprises, as well. In both North America and Europe, some high-profile companies fell into bankruptcy, while others came close to it, some as the result of what look (in hindsight) like crass managerial errors, and others because of outright fraud. Apparently well-funded private pension plans face serious deficits, while the U.S. and European economies — particularly those of the core countries of the Euro zone — remain weak to the point at which fears of deflation on the Japanese model have recently been voiced.

Disappointments

Things were not supposed to work out like this. In the 1990s, in comparison to the 1970s and 1980s, inflation was relatively low, and not just in Canada. Economists expected that mild inflation would bring extra stability to the financial system and to the overall economy, leading to improved real performance. These expectations seemed realistic as the 1990s progressed, particularly in North America; since the turn of the century, however, the outlook lost much of its lustre.

Recent experience is not without precedent. In the U.S. in the 1920s, growing prosperity ended in a stock-market crash that ushered in the Great Depression at a time when the price level was more or less stable, even falling from early 1927 onwards. Earlier still, the gold-standard era produced frequent financial crises, even as it produced longer-run price level stability and economic expansion.

Sorting out the Issues

The sorry history of financial instability in the 1990s involved instances when there was a stable monetary regime in place and when there was not. It is the episodes of instability that erupted when the inflation rate was stable that may provide lessons for Canadian policy.

Fiscal Policy and the Exchange Rate

There is more to a successful low inflation policy than the achievement of low inflation at a particular point in time. Whether embodied in a formal target or not, a low inflation goal must be matched by the monetary authorities' power to achieve it on a sustained basis, and the public must be confident that such power can and will be deployed systematically. Only then will low inflation be properly embedded in a stable monetary order which can contribute more broadly to the economy's smooth performance.

The fiscal background is critical in this regard. Monetary policy must be underpinned by responsible fiscal policy for the public at large to have faith in its stability. Government policy towards the exchange rate is also important. Countries where memories of high inflation are fresh, and faith in the local monetary authorities' promises to do better in future is weak, frequently resort to pegging the domestic currency to some other monetary unit, typically the U.S. dollar, as a means of enhancing the credibility of low domestic inflation. However, such a measure can only work to the extent that the peg itself is credible. Fiscal discipline is essential in establishing such credibility. So, too, is the political discipline needed to ensure that relative price effects requiring real exchange-rate changes, whether they arise from shifts in tastes and technology, or accompany cyclical swings in economic activity and fluctuations in international capital flows, are absorbed by movements in domestic wages and prices alone.

In countries where governments do not have a firm grip on fiscal policy, or where the durability of a fixed exchange rate is suspect, low inflation, even if achieved for a while, will not become a credible feature of the economic landscape.[3] The uncertainties that arise in such cases involve the workings of the economy, but more importantly of political processes as well. Participants in financial markets must assess, and take risks on, not just the prospects for particular companies or sectors of the economy, but future political decisions about levels of taxing and spending, as well as the exchange rate.

There are many reasons why financial markets are effective in coping with risks that arise out of the usual workings of a market economy, but not against those arising from political decisions. Ill-conceived policies can therefore

3 Fiscal pressures pose an immediate threat to monetary stability only when levels of public debt are already high. Canada was approaching such a state of affairs in the mid-1990s, which was why deficit elimination became an essential feature of fiscal policy at that time. By contrast, the United States federal deficit is currently causing concern, but that country's debt levels are still relatively modest by conventional measures. The fiscal stance of the United States government is certainly not sustainable in the longer run, but there is still time, two or three years, say, to change it before it begins to pose an imminent threat to the country's monetary stability.

undermine markets' capacity to cope with the problems posed by the everyday operations of the private sector. As well, shocks arising in one part of the world as a consequence of the erosion of confidence in fiscal policy or in the authorities' ability to maintain an exchange-rate peg will have consequences in financial centres elsewhere that are home to important participants in international capital markets.

Some Crises are Predictable

In recent episodes, the onset and spread of financial instability was predictable. Turmoil arose in Russia in 1997 and 1998 as an adjunct to a fiscal situation that had become unsustainable.[4] Given Russia's foreign indebtedness, there was bound to be turbulence in an international financial centre such as New York (among other places) when a default occurred. In turn, lenders based in New York and elsewhere incurred losses, and sought a safe haven for their funds in U. S. government securities while they reassessed their plans. Those purchases then created turbulence in New York and particular problems for some institutions located there. The only (but from market participants' point of view, crucial) things that could not have been foreseen were the timing of the crisis, and, once Russia defaulted, how big the problems in New York would be, which institutions they would affect, and to what extent.

In other examples of predictable episodes of instability — Europe in 1992, Mexico in 1994, Asia in 1997 and 1998, Brazil in 1999 and Argentina in 2000 — exchange-rate pegs of various degrees of firmness were abandoned once it became clear that their maintenance would require such severe contractionary domestic policies that they would have been politically insupportable. In each case, it was not hard to see before the event that problems were on the near-term horizon, though their precise timing and patterns were not so easy to assess before the event.

Critically, in all of these cases, the trouble stemmed from policies being pursued that could not have been sustained under an inflation-targeting regime. That is why they have very few, if any, direct lessons for current Canadian policy.

Surprise, Surprise

Other cases of financial instability in the 1990s arose unexpectedly, however, under conditions of sustained and credible low inflation, in economies where fiscal policy was firmly under control, and where the authorities had made no unsustainable exchange-rate commitments. Among them: Japan's bubble economy and its aftermath at the beginning of the 1990s; the high-tech bubble in North America and Europe at the end of the decade, as well as the incipient worries

4 For a recent review of the details of episodes of financial instability that have particularly impinged on Canada, see Mark Illing's "Review of Notable Financial-Stress Events" in Chant, Lai, Illing and Daniel (2003). Illing begins his discussion with the stock-market crash of 1987, and also deals with bank failures in Canada in the early 1980s, events which do not figure in the account given here because they pre-date inflation targeting and seem to have originated to an important extent in the kind of monetary policy instability that inflation targeting, properly conducted, has eliminated.

about deflation and the gathering pension problems of North American and European companies that have followed its collapse. Episodes such as these require that we take seriously the growing interest in financial stability issues that policymakers are nowadays displaying.

The Big Economic Question

Much modern technical literature on financial instability isolates it as a phenomenon of financial markets. That is a mistake. In the interwar years, when financial instability was rampant, its analysis was habitually, and in my view correctly, carried on in the context of certain profound questions about the nature of the market economy; specifically, is such an economy inherently stable and smooth functioning if left to its own devices, or does it require the constant attention of government and, if so, what kind of attention?[5]

Shifting Views on Economic Stability

In the immediate aftermath of the Great Depression, it seemed obvious that market mechanisms had failed and that policymakers had to make a choice between the wholesale adoption of some socialist form of economic organization, or re-configure capitalism to accommodate whatever degree of government involvement was needed in markets to stabilize them. The political success of what is often called the Keynesian Revolution arose precisely from its claim to have produced a theoretical blueprint that would make intervention feasible.

Governments that rebuilt their economies according to that blueprint in the post-World-War 2 era, found that the success of their policies diminished as time passed, although economic performance clearly exceeded the standards set after World War 1. Still, the reversion to a greater reliance on market mechanisms in the 1980s and 1990s reflected more than a reaction to this experience. Economists reassessed inter-war history and some of them concluded that the instability of the period was largely the result of policies even more misguided than those of the 1945-to-1975 period and had little to do with any inherent flaw in capitalism. Governments' — particularly the British government's — attempts to return to the gold standard after the Great War failed, and monetary policy, especially in the U.S. in the early 1930s, was inept and sometimes actively destabilizing.[6]

The currently dominant idea that governments should use monetary policy to achieve the relatively clear-cut goal of keeping inflation low and stable in the medium term, rather than deploying it as a supplement to a generally interventionist economic-policy regime, is as much a product of this reassessment

5 See Alexandra Lai in Chant et al (2003) for a survey of the modern literature referred to here. Laidler (2003) gives an account of the inter-war literature that pays particular attention to the lessons for current debates that can be drawn from it.

6 Landmarks in the academic literature expounding this broad interpretation of the inter-war years are Friedman and Schwartz (1963 Chs,6-8), Eichengreen (1990), Timberlake (1993, Chs. 17-18) and Meltzer (2003, Chs. 4-5). These authors differ in many details of the stories they tell, some of them important ones, and though the re-assessment of the 1920s and 1930s to which they have contributed is taken seriously by all scholars, it by no means commands universal acceptance.

of the historical record as of disillusionment stemming from the policy experience of the 1960s and 1970s.[7]

Investment and the Cycle

The reassessment, however, also supported other changes in economic thinking. In particular, commentators began to forget that doubts about capitalism's inherent instability long predated the 1930s, and that the doubters emphasized a fact that still characterizes today's economy: Economic activity tends to follow a cyclical pattern in which swings in business investment are far more pronounced than those in other components of production.

Explanations of this phenomenon in the inter-war literature focussed on the effects of the large scale and indivisibility of most investment projects, the time it takes to complete them, and their durability once complete. Commentators and scholars emphasized that plans to tie up large amounts of resources for long periods of time must be made on the basis of incomplete and highly uncertain assessments of their outcome and that, once set in motion, they become increasingly hard to change, let alone reverse, as new information emerges. Thus, they considered fixed investment as inherently prone to mistakes. Investment, moreover, had to be financed, so those mistakes were likely to have repercussions in financial markets. When they become public, the information would send stock prices lower and bond yields higher, often causing difficulties for banks. If such errors were widespread, financial markets overall would tumble.

It is hard to dismiss this reasoning out of hand. It implies that even if the monetary authorities do nothing to destabilize the economy, private-sector investment decisions can cause trouble on their own. It also suggests that a stock market boom and bust and associated pressure on the financial system that arise in otherwise stable monetary conditions are reflections of a process of capital accumulation that has gone wrong and come to a halt as the non-viability of certain investment projects becomes widespread. The emergence of the Japanese bubble economy in the late 1980s and its collapse in 1991, the high-tech boom and bust in North America a decade later, and the low-inflation boom of the 1920s in the U.S., with the subsequent downturn and stock market crash, are all, perhaps, manifestations of such forces at work.

Monetary Policy as De-Stabilizer

Ill-conceived monetary policy can clearly make these effects worse. If monetary authorities allow an expansion of money and credit on a scale that is sufficient to lead to higher inflation to feed an investment boom, its vigour will be greater. If they allow pressure on financial markets produced by the boom's eventual collapse to lead to tight money, the subsequent slump will be intensified as well, and is likely to cause disinflation, or outright deflation. Thus, if central bankers

7 When a central bank targets inflation this does not imply an abdication of responsibility towards promoting the economy's real performance. There is ample evidence that, once firmly in place, low inflation contributes to real growth and high employment.

aim monetary policy at low and stable inflation over the medium term, they will also reduce the risk of amplifying cyclical swings, without, of course, eliminating such fluctuations altogether — a fact worth stressing.

The successful achievement of low inflation can all too easily induce a misguided belief among policymakers and the general public that this removes all sources of financial instability. As Crockett (2003) argued, however, such complacency increases the probability that other problems can develop unnoticed; indeed, such an effect might have been at work in the Japan of the late 1980s and the United States of the late 1990s, not to mention the United States of the late 1920s. Only if we remain fully and constantly aware that not all financial turmoil originates in monetary policy, but can arise from other sources that lie deep in the economy's structure, does this point lose some of its force as an argument for broadening the mandate of monetary policy.

Possible Roles for Monetary Policy in Countering Instability

These considerations present an obvious challenge for monetary policy. If the maintenance of low inflation reduces, rather than eliminates, the vulnerability of the real economy and the financial system to instability, is there anything more that policymakers can do? There are two broad possibilities. First, the central bank can continue to focus on inflation, accept occasional bouts of instability as inevitable, avoid measures that might amplify them, and stand ready to mitigate their effects on the financial system when they nevertheless occur. Second, and more ambitiously, it can try to forestall instability before it becomes acute.[8]

The first of these responses involves the bank's conventional lender-of-last-resort role, and it is compatible with a policy regime aimed overall at the maintenance of stable inflation, such as is now in place in Canada. The second calls for the central bank to take a forward-looking and pre-emptive policy stance towards instability, and pursue goals more ambitious and complicated than the stabilization of inflation.

The Lender of Last Resort

The idea of the central bank as the lender of last resort to the financial system is both old and simple.[9] When a financial crisis threatens (for any reason), the argument goes, the public in general and financial institutions in particular are likely to seek the protection of larger holdings of liquid assets. In the absence of any policy response, the competition to obtain these will lead, at the very least, to rising interest rates and reduced volumes of lending, leaving companies starved for working capital at the very time that markets for their output are contracting

8 In his recent contribution to Chant et al. (2003), John Chant refers to the first of these options as involving the "containment" of financial instability, and the second as attempting its "prevention".

9 Chant, in Chant et al. (2003), rightly notes the important contribution made by Walter Bagehot (1873) to popularizing the idea of the Bank of England as the lender of last resort to the British financial system in the 1860s and 1870s. However, the idea is much older. Sir Francis Baring applied the phrase "dernier resort" to the Bank of England as early as 1797.

as potential customers try to build up their own stocks of liquid assets. Such developments can lead to general disinflation or even outright deflation, to a concomitant disruption of real economic activity and to the failure of otherwise sound firms and financial institutions.

The central bank, however, can create its own liabilities in essentially unlimited amounts, and it can use this power in two ways. For one thing, it can provide liquidity to the market in general and, if it does so with sufficient vigour and promptness, this can prevent monetary contraction gathering momentum after the initial bursting of a financial bubble. Second, it can offer aid to particular institutions if it judges their problems to be the product of temporarily dislocated markets rather than of some fundamental unsoundness.[10] If these powers are used in a timely fashion, then the potentially damaging downward spiral can be avoided, or at least mitigated. Furthermore, the more public confidence there is before the event that such intervention will be forthcoming if it is needed, the less intense any spiral is likely to be in the first place.

The central bank's lender-of-last-resort role is quite compatible with a commitment to low and stable inflation. If monetary policy is properly geared to stabilizing the inflation rate, it is unlikely to be the initiating factor in a crisis. However, in an environment where inflation is already low, a crisis occurring for some other reason, such as the collapse of an investment boom, would drag inflation below its target. In such circumstances, the creation of liquidity to stabilize the financial system would therefore be required to keep inflation on track, which is not to deny that getting the direction of policy right would be easier than calibrating the amount of assistance necessary.

The injection of liquidity into a system in times of crisis may require the central bank to do more than cut interest rates. At any time, the public's ability and willingness to borrow depends not on the absolute value of the interest rate that the central bank sets, but on its value relative to the return they expect to realize as a consequence of their borrowing. When business conditions are depressed, and particularly if there is any fear that the price level might start to fall, what seems like a very low interest rate can be prohibitively high when seen through the eyes of a potential borrower.

The lender of last resort that is determined to provide liquidity to the market as a whole is, therefore, well advised to become an active buyer of securities and in an open economy, should this fail, perhaps of foreign exchange. And since the object of the exercise is to inject liquidity into the system, should it opt for the latter alternative, its foreign-exchange market intervention must not be offset by operations in the domestic bond market. If it is offset (or sterilized) in this way, the purpose of the intervention will be defeated. In this view of matters, Japan's problems since the collapse of its bubble economy, have had a lot to do with the

10 Some contemporary discussions of the lender of last resort confine the phrase to characterizing the central bank's dealings with specific institutions. Fred Daniel, for example, stresses such activities in his discussion of the concept in Chant et al. (2003). This rather narrow usage is relatively new, and the broader sense in which the term is deployed above conforms to traditional practices in the literature on financial crises which, from Henry Thornton's (1802) seminal contribution onwards, has often given pride of place to activities designed to support financial markets in general.

passivity of its central bank, and its tendency to sterilize the monetary consequences of its foreign exchange market interventions.[11]

Pre-emptive Strikes

There is something a little untidy about a monetary policy regime that single-mindedly pursues low and stable inflation, but relies on lender-of-last-resort activities to pick up the pieces when this proves insufficient to stabilize the economy in general and the financial system in particular. Operations of the latter sort cannot be expected to eliminate all the adverse consequences of a boom that has gone wrong.

To see this, there is no need to look further back than the recent high-tech bubble in North America and its associated stock market boom. In its aftermath, the Fed and the Bank of Canada, as well, loosened monetary policy considerably and ensured that there were no significant failures of financial institutions. Furthermore, the real slowdown that was associated with the collapse of the boom was mild — so mild, in fact, that in Canada it did not even qualify as a recession.

Still, it is clear in hindsight that stocks in high-tech companies had become severely over-priced in the late 1990s, and that some investors sustained huge and permanent losses when they fell. It is also clear that the deflating of the bubble had consequences for the performance of financial markets well beyond the high-tech sector, and that these problems have made a contribution to the currently perilous state of many pension funds.

Behind these financial-market phenomena lurk important real economic factors. Resources were seriously misallocated in the 1990s. Clearly, far too much computing and communications equipment of all sorts was produced. This investment was misdirected and unproductive, causing output now and in the future to be lower than it otherwise would have been. These fundamental economic facts are reflected not just in the losses incurred by people who invested directly in the companies that were producing high-tech goods, but also in the reduced real-income prospects of retirees and wealth holders more generally. Pension funds are going to have difficulty keeping their promises to their members because the stock market plummeted. Behind the market's decline, however, lies the more fundamental reality that the economy's real output is going to be less than was expected when those promises were made, because resources were wasted in the interim.[12]

None of these problems will, or indeed can be, solved by post-bubble monetary expansion implemented by an active lender of last resort, and it is at

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11 As did the problems of the United States after October 1929, as Friedman and Schwartz (1963) and Meltzer (2003) have argued. Fed policy since the collapse of the high-tech bubble has clearly been heavily influenced by this interpretation of earlier episodes. It is surely no co-incidence that Alan Greenspan provided a Foreword to the Meltzer study.

12 I do not mean to attribute all of the pension funds' problems to these causes. Clearly, these were also greatly exacerbated by optimistic assumptions about long-run market rates of return that were heavily conditioned by nominal yields generated during the inflationary 1970s and 1980s. To the extent that this latter factor was at work, the establishment and maintenance of low inflation after 1990 should help to ensure that such over-optimism will in due course cease to be a problem.

least arguable that recent expansion in the real economies of a number of countries has been too dependent for comfort on housing markets that might now be in the middle of a bubble of their own, induced by easy money. It would not be the first time that un-saleable condominium projects have given very public evidence of investment errors.

If monetary policy had nipped the "irrational exuberance" of the late 1990s in the bud, even at the cost of slowing down the real economy for a while and creating an episode of relatively low inflation, things might have turned out better in the longer run. Everything hinges, of course, on that *if*, but at this point in the argument, it will suffice to note that some very well-informed commentators believe that this might indeed have been accomplished, at least to a degree sufficient to be useful, and that they also argue that in future, monetary policy ought to take account of this possibility and pay some attention to the pre-emption of financial instability, even at the cost of allowing inflation to fall below its target range for a while.

Pre-emption and the Policy Regime

In order to implement such a strategy, three matters need to be addressed. First, it must be possible to forecast instability, and economists do seem to have had some success recently in isolating economic variables capable of indicating that financial-market trouble is in store.[13] Second, it is necessary to agree on what specific measures could usefully be taken in response to an early warning. In this area, there is a reasonable consensus that if a central bank wants to prick an asset-price bubble, it must tighten monetary policy. Third, a decision must be made about how to fit such activities into the monetary-policy regimes we now use to formally or otherwise target inflation.

There is an uncomfortably wide range of opinion about how to meet this last requirement. Proposals form a continuum, running from simple suggestions for modifying the technical details of inflation-targeting regimes without changing their basic spirit or public presentation, to plans that would make the maintenance of financial stability an explicit goal of monetary policy, to be pursued alongside low and stable inflation and, therefore, sometimes explicitly traded off against it for periods of time longer than would be regarded as tolerable under current targeting regimes.

When Inflation Remains the Target

In the first category are suggestions that policymakers who are intent on stabilizing inflation should monitor and perhaps attempt to forecast the behaviour of asset prices and take such information into account in their decisions. In Canada, for example, this might involve the Bank of Canada in such activities as

13 See in particular Borio and Lowe (2002) who build upon earlier work by Kaminsky (1999) and Kaminsky and Reinhart (1999). This ongoing body of research, however, has not yet clearly distinguished between the task of forecasting financial crises in what have been referred to as "no-surprise" cases, and those that occur when fiscal policy and the exchange-rate regime are not a source of trouble.

tracking developments in commercial real estate markets, the housing market, and the stock market for early warnings of rising inflation and, to the extent that it is useful, weighing that information in the balance with other factors when decisions about the overnight rate are made. It is probable that the bank already does this, if only informally. And if new work were to show that there is more relevant information about the economy's future course in asset-market data than is now believed, it would also be hard to object to the bank exploiting such an addition to knowledge.

Policy decisions made under an inflation-targeting regime must pass two tests. First, policymakers must strive to keep the inflation rate close to its target. Second — and critically — they must ensure that policies designed to bring inflation closer to that target over any particular near-term horizon do not make it more difficult to keep it on track in the longer run. For example, there would be little point in the Bank of Canada aiming to get inflation closer to 2 percent over a three-month horizon if that required putting policy onto a time path that would make it difficult to avoid a zero-inflation rate six months later.

This second test is crucial when we discuss the problems posed by financial instability for an inflation-targeting regime. We have seen that investment booms and the financial pressures that go with them can build up without the inflation rate necessarily increasing, but that if they come to a sudden end, there can be disinflationary consequences. A policy stance that resolutely ignored these eventualities and concentrated only on the current inflation rate even in the face of clear evidence that an asset-market bubble was developing might pass the first of the above tests for a while, but it would be likely to fail the second. Even when inflation is already running close to its target and even if the sole aim is to keep it there, the Bank of Canada should only completely ignore an asset-market boom in setting its policies if it is also confident that to do so would not threaten a later collapse — driving inflation below target and forcing it into hard-to-calibrate expansionary lender-of-last-resort measures afterwards.

On the other hand, should the bank decide to take measures to deal with such a phenomenon, it would have to take great care to ensure that those measures did not precipitate a downturn in the real economy and a significant fall in the inflation rate below target.[14] This consideration suggests that, attractive though the arguments may be in the abstract for paying attention to asset prices in the design of policy, an inflation-targeting central bank like the Bank of Canada will want to act with great caution when it comes to dealing with actual circumstances.

Monetary policy must be forward looking, and if today's asset market behaviour seems to have implications for the future behaviour of the inflation rate and for the central bank's range of options for keeping it on track, even the most ardent inflation targeter should take notice of it. But there is no hard and fast general rule for responding to such eventualities, even within a clearly defined

14 As a recent paper by Charles Bean (2003) makes clear, these considerations have been playing an increasingly important role in Bank of England thinking as that institution pursues inflation targets in the face of a vigorous boom in residential real-estate prices that displays many of the characteristics of a bubble, but for which cogent explanations in terms of market fundamentals can also be offered. The Bank of England's problems in this regard vividly illustrate the difficulties of recognizing a bubble while it is still in progress.

inflation-targeting framework. Although the central bank's scope for exercising discretion is limited under such a regime, the judgement of well-informed and experienced policymakers is sometimes needed to make it work well. Nowhere is this requirement more evident than in judging the significance of current asset-market behaviour for the future time path of inflation, and incorporating that judgement into current policy decisions.

Beyond Inflation Targeting

The line between taking notice of asset-market information within the current inflation-targeting regime, and making the promotion of financial stability an extra goal of monetary policy, might seem to be a thin one, but the line is real. Financial instability is a manifestation of more fundamental forces associated with fluctuations in investment in the real economy, and a central bank that accepts an explicit obligation to pre-empt it takes a big step towards trying to fine-tune real variables as an integral part of policy. In principle, such a more complicated regime is manageable, but in practice, an earlier version of it brought much economic grief in the 1960s and 1970s. It is at least incumbent on those who want monetary policy to take greater account of financial stability issues to explain how it can avoid falling into a similar trap next time around.

One of the many advantages of settling for the less ambitious goal of stabilizing the inflation rate is that the links between the variables directly under the monetary authorities' control — the overnight interest rate under current Canadian arrangements — and inflation itself are reasonably well understood and that a great deal is known about which economic variables are useful leading indicators of inflation. Though economists are making progress on forecasting financial instability, this is not nearly as well developed a skill as managing inflation. And where the art of forecasting an economic phenomenon is underdeveloped, there is bound to be difficulty in diagnosing the economy's current condition, in agreeing on policies to influence it, and perhaps in implementing them.

That famous phrase "irrational exuberance" was first used by Alan Greenspan to describe U.S. stock market behaviour in December 1996, but at that time and for long after, many responsible people were willing to argue that the behaviour of the market reflected the fundamentals of what was often referred to as a new economy. That position became increasingly difficult to defend as the decade moved towards its end, but it did not become utterly indefensible until the bubble had actually burst. And it is still an interesting and unsettled question as to just what extra degree of tightness in monetary policy in 1999/2000 would have been sufficient to curb the stock market and to create a better result for the economy's overall performance, or indeed whether such a possibility even existed.[15]

15 It is important to recall that the tightening of U.S. monetary policy in 1928, which preceded the downturn in real activity that began in the summer of 1929, was explicitly intended to curb the stock-market bubble and that during the downswing of 1930-to-1933, a major obstacle to the implementation of vigorous expansionary monetary policy was a fear on the part of many policymakers of re-igniting speculation before they had wrung out the imbalances which they believed had built up in the late 1920s.

Staying Transparent

Transparency is an important characteristic of any monetary order that pursues the single goal of low inflation. To the extent that private agents understand that this is to be expected from monetary policy, and do so with confidence, they are able to improve their own economic decisions. They are also able to monitor the performance of those in charge of policy and hold them accountable for any shortcomings, providing strong incentives to the experts to do the best job possible.

Proposals to modify the policy regime by explicitly including the pre-emption of financial instability among its goals raise contentious issues in this regard. With multiple goals, the public will find it difficult to gauge the trade-offs between stable inflation and the maintenance of stability that the authorities are making at any time. As a result, individuals will have more trouble adapting their own activities to the conduct of policy. That will also make it more difficult, should things go wrong, to argue after the fact that the bank made a policy mistake. The accountability of policymakers will therefore also be reduced.[16]

The Global Dimension

Investment booms and associated financial market problems frequently spill across national boundaries, for a number of reasons.

For one thing, major multinationals cross-list their shares on different stock exchanges, ensuring that arbitrage will create correlations among these markets' performances. A bubble in one market that affects the valuations of such companies is therefore likely to have repercussions in others; so is a collapse.

For another, there is the phenomenon of contagion, which seems most likely to arise when investment booms, market bubbles and crises occur, not in international financial centres, but in peripheral markets to which agents located in the larger centres are exposed. When a boom is under way in one place, lenders who are making exceptional profits may be tempted to replicate them in other areas and create bubbles in those locations, as well. When a bubble in one place bursts, demonstrating to lenders that they were badly informed about prospects there, they may well conclude that their confidence was more broadly misplaced and begin withdrawing funds from numerous areas. This seems to have been one cause of the Tequila Crisis of 1994, which originated in Mexico, spread elsewhere in Latin America, notably to Argentina, and eventually gathered such momentum that Canadian interest rates were significantly affected.

These effects are in addition to those arising from the international dispersion of activities linked to specific industries. Industry-specific investment booms often have an international dimension. Though Silicon Valley was the most visible location for the over-expansion and subsequent collapse of high-tech firms, Ottawa, not to mention Be'er Sheva, also experienced the boom and bust. And when the closely related investment boom in the telecommunications sector came

16 The effects of complicating the central bank's policy agenda on the transparency of policy, as well as the accountability of policymakers is stressed by Issing (2003).

to an end, not just AOL, but Bell Canada and Vivendi International also found themselves in trouble.

These developments raise the questions of whether financial instability has an international dimension and, if the task of pre-empting it is to be the prerogative of central banks, who will decide which central bank should act in any particular circumstance? For example, could the Bank of Canada have done anything on its own to prevent the bubble in Nortel Networks Corp. stock or that of JDS Uniphase Corp.? And what could the Fed have done before the fact to prevent Long-Term Capital Management from getting into difficulties, given that an important source of its troubles originated in Russian fiscal irresponsibility?

After such events, central banks in economies with well-developed financial sectors are able to pick up the pieces that fall in their own backyards and to act more or less independently to stabilize their own monetary systems. However, pre-emption probably requires internationally co-ordinated policies. If there were a single world currency, or an international monetary system based on fixed exchange rates, the problem would not arise because policy co-ordination among nations is inherent in such arrangements. Even among groups of countries for which the U.S. dollar, or the Euro, acts as a key currency, it is natural to think that the Fed or the European Central Bank could take the lead in dealing with stability issues.

With countries like Canada that maintain their own currencies and float them freely to make the pursuit of domestic goals feasible, it would be difficult in the extreme to take part in internationally co-ordinated efforts to deal with threats of financial instability originating elsewhere. At the same time, the creation of institutions through which such policy conflicts between domestic goals and international obligations could be negotiated and speedily resolved might profoundly change the nature of the monetary order that is currently in place.

Still, there is clearly room for international co-operation in helping to design a more stable set of financial markets, though it would take us far beyond the scope of this essay to discuss the measures that have already been, or soon will be, implemented in this regard. But plans for aiming the conventional tools of domestic monetary policy at pre-empting financial instability, in addition to maintaining low inflation, on top of all the other problems they present, seem to require a degree of international policy co-ordination with implications that have not been thought through.

An Important Paradox

Finally, it is important to note that to be able systematically to pre-empt financial instability, the authorities must have the capacity to forecast it and then to devise a quantitatively appropriate policy response. However, if the public is also to be comfortable with such a regime, it must accept that the authorities can indeed make such forecasts; but how could the public have such confidence without at least some of its members understanding enough about what is involved to be able to make the same forecasts on their own account?

If members of the general public can indeed do that, will that not be sufficient to ensure that private action will be taken to forestall the very instability that the

authorities are supposed to prevent? After all, agents who can confidently forecast asset prices in the future will be unwilling to hold them in the present as their current price approaches that level, and by the very acts of ceasing to buy them, or of attempting to dispose of them, will bring any undue rise in their prices to an end.[17]

The obvious objection here is that agents often do not seem to do so early enough to provide stability, but that is not because they willingly participate in bubbles that are widely and clearly recognized as such while they are in progress. Rather it is because that recognition is neither immediately widespread nor confident. Assessments here are inevitably probabilistic; they change over time as new information appears, and they vary among agents at any time, as well. It is therefore critical to ask whether and why we should expect the monetary authorities to be any faster or more accurate on average than other agents at making such assessments. Until we can give a confident answer to the first part of this question and a well reasoned one to the second, we are going to have difficulty making the case that central banks are uniquely well qualified to implement activist policies designed to pre-empt financial instability.

Conclusion

Instability in financial markets clearly presents a real problem for economic policy. What is very much in question, however, is whether this is a problem for monetary policy, as that term in usually understood. This *Commentary* has suggested that it is not.

To begin with, it is clear that low and stable inflation, particularly when it is the product of a well-configured, inflation-targeting regime, in and of itself reduces the chances of financial instability. Private-sector decisions of all sorts are less error prone in conditions of monetary stability because prudent fiscal policy is a necessary pre-requisite for stable inflation in the longer run, and because inflation targeting precludes the authorities from setting potentially unsustainable exchange-rate targets. A low-inflation monetary order in and of itself eliminates some sources of financial instability, and to the extent that it adds an element of built-in stability to the real economy, it also reduces the chances of problems that originate in the private sector getting out of hand.

Even so, low inflation is not a cure-all, and it is important not to let its successful pursuit create complacency about the possibility of financial instability arising even in its presence. Such turbulence can and will appear from time to time because it is sometimes a symptom of those deeper problems of the workings

17 Up to a point, there may also be similar forces at work with respect to inflation. When the general public confidently expects an inflation-targeting central bank to be successful, this does engender expectations that make the bank's task easier. However, the leeway that this gives to a central bank is limited, and current policies that look systematically calculated to produce inflation in future can all too easily cause expectations to change. Bernanke and Woodford (1997) discuss aspects of these phenomena. The difference between inflation and financial instability is that inflation always requires expansionary monetary policy to sustain it, while serious financial instability can sometimes originate in the workings of the private sector even in the presence of monetary policy that does not encourage it.

of a market economy that we refer to as the business cycle. Economists long ago learned how to build economic models that generate cycles that are non-monetary in origin, but within which monetary policy can be used to mitigate or even eliminate them. For a while, it even seemed as if those skills could be extended to improve the performance of the actual economies that we live in. The ultimate result was the kind of ambitious fine tuning that came to grief in the 1970s.

It is not clear that we know any more now about how to manage such policies than we did then or that our capacity for co-ordinating policies across national boundaries in order to deal with the international element that seems to be inherent in the cycle is notably greater, either. And there is also the suspicion that if policymakers did make major progress in solving these problems, then the spread of that knowledge to private agents might render the efforts of policymakers redundant. Even so, officials and commentators seem to be in real danger of forgetting the painful lessons we learned from the 1970s and 1980s, as well as those garnered in the 1990s, about just how difficult it can be to attain and sustain so simple but fundamental a goal as low inflation. This forgetfulness carries with it the danger that monetary policy might again become over-ambitious.

Current arguments for giving the pre-emption of financial instability a more important place than it now occupies in monetary policy stop far short of advocating a return to 1960s style fine-tuning. Still, the very fact that financial instability has roots in more fundamental economic processes ensures that they amount to a case for moving in just that direction. In assessing those arguments, then, it is as well to remember that in matters of monetary policy, a central bank that pursues ambitious goals can sometimes produce worse results than one that keeps things simple. That is why the Bank of Canada should stick to its knitting.

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